COMMENTS
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PROPOSED EXPLANATIONS OF SIGNFICANT DIFFERENCES
PORTLAND SUPERFUND SITE
December 18, 2018

I am writing in response to the EPA request for public comments on the changes in the ROD. *I am writing in my personal capacity and not representing any organization.*

I have been studying the Portland Superfund for approximately 10 years, and included it in my books, articles, courses, and public service. That relevant public service includes appointments to the National Environmental Justice Advisory Committee and the National Advisory Council for Environmental Policy and Technology, both EPA FACAs. It also includes appointments to state advisory committees such as the Oregon Environmental Justice Task Force, and RACs for various proposed rules from state agencies. I have also personally attended several Oregon Bar Association Continuing Legal Education conferences and sessions specifically on the Portland Superfund. I have met with many community groups on Portland Superfund. My comments are rooted in these experiences.

1. The process of changing the ROD, as this does by decreasing size, scope, and value of the cleanup, diminishes the involvement of all publics in the 17 years prior this change. The involvement of business, their many lawyers and consultants (who explicitly view this as their personal economic development at Continuing Legal Education meetings), of local communities, of the city of Portland, of the state of Oregon, of the region, of local, state, national and international entities and many other individuals and organizations is abrogated by this significant change in the ROD. The ESD downplays the impact of the proposed change by comparing it to the entire site area. For

transparency it should also be compared to the area and magnitude of the site impacted by PAHs. This change in 17 acres may appear to some to be a small piece of the entire Portland Harbor area, but in actuality it is a much larger piece of the PAH pie.

The reopening and relaxing of the ROD requirements at this point, less than 2 years into it, is poor environmental decision making because it allows potentially liable parties (PRPs) to demand changes by circumventing normal decision-making processes. It raises the following questions for both the environmental decision-making here, and for the next generation of elected officials at the local, state and national levels.

a. Will other parties to the ROD have the same special treatment?
b. Will EPA consider new information or toxicological studies for all Portland Harbor COCs?
c. How and when would EPA also adjust ROD CULs and RALs downward for any COCs that are found to be more toxic than estimated in the ROD during the timespan of remedial design and implementation?
d. Will new research on bioaccumulative and synergistic impacts on human health and the ecosystem be incorporated to make the harbor truly safe and clean for present and future generations?

2. The specific process of decision-making and the decision is not only contrary to transparent public involvement but also stifles meaningful public redress. Changing the scope, size and value of the ROD in response to likely PRPs, and likely the largest offenders of the harbor, in a secret decision-making process where their identities are kept hidden by the EPA is blatantly non-transparent. To finalize the decision quickly with

a consent decree makes the secretive decision protecting the identity of large PRPs virtually untestable.

Let's flip the script. It would not be imaginable for the EPA to meet with four unnamed community groups and as a result of this meeting issue a consent decree to increase the size, scope and value of the ROD. The difference is that community did not cause this pollution and did not profit from it but they do bear the human and environmental health consequences. These business entities did pollute, did profit from it and do not bear the health consequences. In this scenario it would be business entities, their insurers, lawyers and consultants who would contest the unfairness of a lack of transparency and an untestable consent decree.

3. The disproportionate impacts by race and class of this type of decision violates the spirit and intent of EO 12898, and probably Title VI. The impacts of Superfund cleanups by race are well known and documented (See A Spatial Study of the Location of Superfund Sites and Associated Cancer Risk **Raid Amin**, Arlene Nelson & Shannon McDougall https://www.tandfonline.com/doi/full/10.1080/2330443X.2017.1408439 for a recent and extensive review of the literature)

4. The decision to reduce the size of the cleanup ignores known chemical synergies where multiple contaminants co – occurred. As is admitted "In most areas of the Site, multiple COCs are comingled". To find that one hazardous and toxic chemical is not as risky as first thought does not necessarily decrease its health risk because the synergistic processes may still result in the risk being the same. Prior to this change the ROD *already* selected the lowest number protective of human health. As stated in Table 17 of the ROD "For each contaminant and in all media such as sediments ad surface

water, the lowest number protective of human health or the environment was selected…" By decreasing the size, scope and value of the ROD, human health and the environment are no longer protected.

5. The reduction of the size, scope and value of the ROD is premature because of inadequate, and thus far, incomplete scheduling of the cleanup of the navigation channels and the overall site and the threat of **recontamination**. If any chemical is reduced in threat to human health and the environment, but is spread by recontamination, then the threat remains.
6. The reduction in size, scope and value of the ROD is also premature because the changes in the PAH remedial action level did not consider groundwater RAOs (4 & 8) since these are dependent on the adequacy of source control actions. These source controls are inadequate, and the risk levels for human health and the environment are not protective.
7. The reduction in size, scope and value of the ROD decreases the protection of human health and the environment because it decreases the area subject to long term monitoring. (RAO 1). Without long term monitoring of areas that pose risks to human health and the environment, will not be as protective.
8. The failure to include direct contact non cancerous human health risks is simply not acceptable. Oregon DEQ has recently developed non cancerous human health risks and these standards should be included before Oregon DEQ issues a concurrence letter.
9. For the record, the change in the size, scope and value of this ROD is the antithesis of sustainability. It flies in the face of the Precautionary Principle where avoiding irreparable risks to humans and the environment are paramount. By limiting this ROD without any consideration of multi generational risks from single, multiple and bioaccumulative exposures, the chances that this cleanup will be safe for future generations is nil.

10. Natural Recovery. As recognized by other informed and engaged stakeholders in this process, the areas of the river most affected by PAHs and the ESD changes are not conducive to natural recovery.
    a. Figures 7 and 8 of the ESD indicate which areas are/aren't conducive to natural recovery and sediment management area (SMA) footprints. See also Feasibility Study figures 3.4-17 (wind and wake wave susceptibility), Figure 3.4-18 series (predicted bed shear stress), 3.4-19 series (erosion and deposition), 3.4-20 (erosional and depositional rates), 3.4-22 (slope), 3.4-24 (propwash), 3.6-2 series (cumulative sediment deposition scores), and 2.2-2 (human health and ecological PRG exceedance).
    b. These PAH source areas will continue to impact both the Portland Harbor truncated "site" as well as the true extent of the site (per CERCLA definition) that extends downstream to all areas where Portland Harbor contamination has come to be located (including the Willamette River, Multnomah Channel and Columbia River). The ROD does not accurately represent the true area of the site.
11. This proposed ESD has forced Tribal Nations to expend more resources into the distribution of PAHs and the basis for PAH CULs at this site. PAH default toxicity values are appropriate for simple sites, but not Portland Harbor. PAH toxicity is source-dependent because PAHs are a mixture of numerous chemicals with highly variable characteristics or ratios of individual constituents that depend on how they are generated. The ROD and ESD apply default values to determine PAH CULs and RALs despite the fact that site-specific data available for the Gasco site (the largest PAH source at Portland Harbor) indicates

that PAH contaminated sediments at Gasco may be more toxic than the default value. Further scaling up in the proposed ESD of CULs to RALs and PTW values, is even more objectionable. I do not agree that it is appropriate to raise CULs, and especially RALs, for hotspots that may be more toxic than default assumptions.

12. PAH contamination at the Portland Harbor site is not harbor-wide, instead it is more distinctly concentrated at two individual sites (Gasco and Terminal 4). The application and methods for determining compliance with CULs and RALs, as described in the ROD, are not protective of the PAH-contaminated sites in Portland Harbor because they use widespread averaging (dilution) of the post-remedy concentrations to indicate achievement of remedial goals. In the ROD EPA uses ½- to 1-mile rolling river mile surface weighted average concentrations (SWACs). Such an approach may have some validity for more widespread/diffused contaminates like PCBs (excluding source areas), but not PAHs (or DDTs), which occur in much more limited but highly-concentrated locations.

13. The original ROD approach was not protective and the proposed ESD ROD revision is worse. TPAHs and cPAHs are primarily located at and adjacent to the Gasco site, with high concentrations located in a small section of the river. As a result, very high concentrations at the Gasco site are allowed to be averaged together with the much lower concentrations observed in the remainder of the river. If the Gasco area were being handled as its own distinct Superfund site, as is more commonly done, the concentrations at that site would likely be treated much differently and require more extensive cleanup. In addition, it is unlikely that Gasco sediments, if handled as its own distinct site, would be allowed to be averaged in (diluted)

with the surrounding ½- to 1-mile of non-Gasco/non-PAH impacted sediments in order to show compliance. I am concerned that the ROD approach will leave a substantial deposit of sediments that will pose risks to humans and ecological receptors for present and future generations. It is wrong to raise CULs, and especially RALs, for hotspots that are more toxic than default assumptions and inappropriately handled as a "widespread" problem. At a minimum, additional analyses should be performed to better determine when risks at that location may reach acceptable risk levels considering the site alone. Furthermore, any evaluation of compliance/ protectiveness should consider the cumulative and synergistic toxicity of all contaminants present.

14. Metabolites. PAH and PAH breakdown product (metabolite) toxicity are incompletely captured in the default IRIS cancer slopes for benzo(a)pyrene alone. For PAHs it's the metabolites that are a larger human health concern.

15. Nearshore areas are not adequately protected. The nearshore area is a very important habitat area where aquatic receptors and humans are more likely to be exposed. Rapidly increasing populations will bring in more human exposures. Increasing the RAL from 13,000 ug/kg TPAH to 30,000 ug/kg TPAH in the nearshore. Leaving behind a greater amount of contaminant hotspots will make it more difficult for natural attenuation to achieve:
    a. Fish consumption & bioaccumulation goals (RAO 2-HH and RAO 6-ECO)
    b. Groundwater goals (RAO 4-HHand RAO 8-ECO)
    c. Surface water goals (RAO 3-HH and RAO 7-ECO) and porewater goals (RAO 3 & 4-HHand RAO 7 & 8-ECO): The proposed ESD sediment CUL and RAL need to be evaluated to determine whether they are likely to achieve surface water cleanup levels within porewater and the surface water

column. The update to the IRIS database may affect the water quality standards in future rule making processes but so will other factors that have yet to be determined. The water quality standards in the ROD are Federal and State standards that have been promulgated under the Clean Water Act. Until these standards are changed via a formal rule making process the water quality criteria used for CULs and RALs developed in the ROD are applicable or relevant and appropriate requirements and must stand as is.

16. Riverbank goals (RAO 9) and Beach goals (RAO 1-HH and RAO 5-ECO) are unlikely to occur through natural attenuation (deposition from cleaner upstream sediments).
17. Compliance methods, standards and protocols are too vague, which creates costs and problems with enforcement. The method for evaluating compliance for each CUL/target/RAL with respect to all RAOs should be clearly explained in the proposed ESD (ex. location specific, ½- or 1-mile rolling river miles, average concentrations over a specific area (ex. site-wide, beach-wide, SMA-wide), etc.)). It is difficult to respond to some of the proposed ESD changes because of the inadequate notice about these compliance processes.

Thank you.

- Author – The US Environmental Protection Agency: Cleaning Up America's Act, Battleground Environment, the Encyclopedia of Sustainability (with Robin Morris Collin), Energy Choices for the Future (eds with Robin Morris Collin), Trash Talk: An Encyclopedia of Garbage and Recycling Around the World.